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## A correlational study investigating the relationship between the Fluidez en La Lectura Oral Lectura (IDEL FLO) and the English portion of the Illinois Standard Achievement Test (ISAT)

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### Abstract

Given the growth in the population of elementary school students in the USA whose first language is Spanish, there is interest in ways to improve both the English language acquisition and reading comprehension of these students. The population under investigation included second and third grade English Language Learners in a suburban Midwestern school district in the USA. This study examined the relationship between student second grade performance on the Fluidez en La Lectura Oral portion of the Indicadores Dinamicos de Exito en la Lectura (IDEL FLO) and their performance in third grade on the English language reading portion of the Illinois Standard Achievement Test (ISAT). Three years of test score data for these two tests were analyzed. A Pearson product-moment correlation coefficient established a positive correlation between the IDEL FLO and the ISAT tests,  $r = .476$ ,  $p = \leq .05$ . Results indicate that student performance on the Spanish oral language fluency test is a moderate predictor of student performance on the English reading test. A binary logistic regression test revealed that students that met benchmark on the second grade IDEL FLO test were five times more likely to meet standards on the third grade ISAT reading test than those that did not meet the second grade IDEL benchmark. The results of this study provide evidence that student success on the Spanish oral language IDEL ORF is a modest predictor for success on the English reading comprehension ISAT exam. A review of the literature, recommendations for practice, and implications for future research are included.

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**Keywords:** English language learners, Spanish language learners, English language achievement test

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## 1. Introduction

The study investigated the relationship between second grade Spanish language oral reading fluency, as measured by the *Fluidez en La Lectura Oral* portion of the *Indicadores Dinamicos de Exito en la Lectura (IDEL FLO)* and their performance in third grade on the English language reading portion of the *Illinois Standard Achievement Test (ISAT)* (Ganan, 2012). This objective extends the work by Fuch, Fuchs, Hosp and Jenkins (2001) who found that a one minute oral reading fluency ORF assessment in English can provide data needed for educators in determining if students are on pace to meet standards on an English language high-stakes reading test. Furthermore, based on English language ORF performance, Baker, Smolkowski, Katz, Fien, Seeley, Kame'enui and Beck (2008) found that second grade spring ORF scores significantly added to the accuracy of performance predictors for the same students on the third grade high-stakes English reading test.

## 2. Theoretical framework

The theoretical framework for this analysis is based upon the Developmental Interdependence Theory (Cummins, 2008). According to Zelasko (2003), Developmental Interdependence Theory suggests that proficiency in a second language is dependent upon a well-developed first language. This theory is based on the development of what Cummins terms basic interpersonal communication skills (BICS) followed by the formation of cognitive academic language proficiency (CALP). Although Cummins' theory of BICS and CALP does not focus specifically on achievement of ELL students on high-stakes English-based assessments, he does address the relationship between the development of native language CALP and success on English language exams. In fact, Cummins' believes that measures of first language CALP are the criteria most likely indicative of when a child is capable of finding success on an English high-stakes test (Cummins, 2008). His belief in the effectiveness of building students' CALP in Spanish prior to fully transitioning to English is confirmed by the fact that over 150 empirical studies within the last 30 years or so have yielded results favoring a positive correlation between building a strong academic foundation in one's native language and linguistic, cognitive and academic growth in both languages (Cummins, 2000).

## 3. Review of the literature

The large and growing population of native Spanish speaking students in the USA has spawned a host of different pedagogical approaches in English language instruction. The most prevalent of these approaches is Transitional Bilingual Education (TBE) (Osario-O'Dea, 2001). Ovando (2003) indicates that TBE programs for native Spanish speakers were designed to provide some academic support for students in Spanish while they attain English proficiency. The goal of such programs is to eventually transition the child into an English-only mainstream setting. There are two models of TBE program designs, late-exit and early-exit. Gallo, Garcia, Pinuelas and Youngs (2008) describe a late-exit TBE design as typically providing Spanish instruction for at least five years, and teachers are encouraged not to exit a student any earlier than the end of third grade. As federal regulations in the United States have required that immigrant children be assessed and exited from an ELL setting as soon as possible, early-exit TBE programs are replacing the late-exit models (Garcia, 2009). Early-exit TBE programs work under the philosophy that native Spanish plays an important role during a child's first few years of learning English, but it is not necessary to further develop Spanish language skills beyond these first few years of schooling. According to Baker (2006), early-exit TBE programs are focused on using the native language skills children possess as they enter school to build a bridge to English fluency. Two-way bilingual immersion (TWBI) instructional models attempt to enroll 50% of students that are native English speakers and 50% of students that share a common language other than English. According to Reyes and Vallone (2007), for both groups of students in a TWBI program, the goals are to develop high levels of: first and second language proficiency, academic development, and cross cultural understanding. Students enrolled in a English as a Second Language (ESL) program find themselves in a self-contained or pull-out model (Baker, 2006). Despite the program design, the English language is taught as a separate content area, not across all academic disciplines (Baker, 2006). Unlike, ESL programs, in a Sheltered English Instruction (SEI) Program, the English language instruction is not isolated into a separate content area, but rather, occurs across all academic subjects. County School District, the district that was the focus of this study, provides two of the

aforementioned instructional options for its population of English language learners, namely, a late-exit TBE program and a self-contained ESL program. Over 75% of the English language learners in County School District are enrolled in the district's late-exit TBE program (Ejma, 2006). The remaining students either did not qualify for ELL services, were formally exited from ELL programming, enrolled in the ESL program (less than 10%), joined a small, recently implemented TWBI program or were denied ELL services via parent request.

#### 4. Research question

The purpose of the study was to address the following research question: What is the direction and strength of the relationship between performance on the 2<sup>nd</sup> grade IDEL FLO, a Spanish language ORF assessment, for students enrolled in County School District's Bilingual Spanish programs and their third grade English-based reading ISAT scores?

#### 5. Methodology

The study was conducted at County School District (pseudonym), which is a medium sized suburban school district in a large metropolitan area in a Midwestern state in the USA. The participants were second and third grade students enrolled in one of seven elementary schools in County School District's late-exit TBE bilingual program from the 2006-2007 through the 2008-2009 academic years. All second grade students in the bilingual Spanish program were given the IDEL FLO test in May. IDEL FLO is a one-minute, oral reading, formative assessment designed to measure the basic literacy skills of children in reading Spanish. It is the Spanish language equivalent of the English based Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessment. The IDEL FLO, individually administered by a teacher, consists of a standard set of passages and administration procedures designed to (a) identify children who may need additional instructional support, and (b) monitor progress toward instructional goals. The passages are calibrated for the goal level of reading at each grade level. Scoring is presented as number of words read per minute (wpm). The same group of students was administered the ISAT reading test (in English) in March of their third grade year. The reading portion of the Illinois Standards Achievement Test is one of a battery of required assessments measuring academic achievement of Illinois students in reading, mathematics, science, and writing. Students in grades 3 take the reading and mathematics subtests. The ISAT is a paper and pencil test administered in a classroom setting. The third grade reading ISAT is a reading comprehension examination of 70 items administered in three 45-minutes sessions (two multiple choice settings, the first short passage, the second longer passages, and an extended response in writing to reading). The raw scores are converted to a standardized scale score with a base score of 120 and a variable top score (up to 400). A "meets" level is determined by a panel of grade level reading teachers in Illinois. The administration of these tests was conducted by classroom teachers and other certified staff. In total, 234 paired spring IDEL FLO and third grade reading ISAT scores were analyzed. Of these 234 students, 122 were boys and 106 were girls. Ninety-three percent of the subjects were low-income students as measured by their eligibility to participate in the free or reduced school lunch program.

#### 6. Results

*6.1 Test for Alternate Hypothesis #1: There is a strong correlation between the spring IDEL FLO test and the third grade reading ISAT exam.*

*Descriptive Statistics.* Of the 234 paired student scores within the sample, the range of the IDEL FLO test was 123 wpm. The mean score of the second grade IDEL FLO test was 71.85 wpm with a standard deviation of 22.66. The range of the third grade reading ISAT was 112 scale points. The mean score was 178.88 with a standard deviation of 23.13.

*Pearson R Correlation Analysis.* Understanding that the spring IDEL FLO test and third grade ISAT differ extensively regarding language, construct, format and timing, the researcher predicted that the two tests would have

a positive correlation coefficient between  $r = .51$  and  $r = .60$ . A correlation of this magnitude would verify that the two tests have a noteworthy relationship. The analysis resulted in  $r = .476$ ,  $p = \leq .05$ . Although this result did not meet the researchers minimum prediction of a  $r = .51$ ,  $p = \leq .05$  correlation, it did fall within the upper portion of the moderate range. However, the  $R^2$  equation demonstrated that only 22.6% of the variance in scores could be attributed to the correlation between the two variables. Therefore, an analysis beyond a correlation was needed.

*Simple Regression Analysis.* Via this analysis, it was concluded that one could be 95% confident that for every one point increase on the third grade reading ISAT, the second grade IDEL FLO value increased from  $r = .369$  to  $r = .602$ . A significance level of .000 indicated that the likelihood of the results being due to chance was less than .001. Based on the results of the Pearson R correlation and simple regression test, it can be accepted that (although the correlation did not reach the .51 level) there was significant probability that a high, moderate positive correlation existed between the two variables.

*6.2 Test for Alternate Hypothesis #2: When combined with the spring IDEL FLO score, at least one of the supplementary variables (gender, years in an Illinois approved ELL program, or SES) will strengthen the ability to predict ISAT scores.*

*Supplementary Variable Pearson R Correlation Analysis.* This test was performed in an effort to gain further insight into whether an additional independent variable was a stronger predictor of ISAT reading performance than the second grade IDEL FLO assessment. Only the results of the analysis between SES and performance on the third grade reading ISAT test were statistically significant. The results indicated a weak correlation of  $r = .152$ ,  $p = \leq .05$ . The  $R^2$  value indicated that only 2.3% of the variation between third grade reading ISAT scores could be attributed to SES. It is important to note that these results may be highly influenced by the fact that over 93% of participants in the study received free and reduced lunch. To further understand the relationship between benchmark performance on the third grade reading ISAT exam and the supplementary variables in the study, two analyses using a binary variable were conducted. These analyses were a logistic regression and a chi-square test.

*Binary Logistic Regression.* The results of the binary logistic regression determined a 67.9% certainty that a student who did not meet standards on the second grade IDEL FLO will also not meet standards on the third grade reading ISAT. When combining all additional supplementary variables into the equation, the predictability percentage increased by only 1.3% (to 69.2%). This alone is indicative that the second hypothesis is rejected. An examination of the odds ratio further supported these results. For the second grade spring IDEL FLO, the odds ratio was 5.663. This means that students who met benchmark on the spring IDEL FLO test were 5.663 times more likely to meet benchmark on the third grade reading ISAT exam than those that did not meet the IDEL FLO benchmark. When students met the IDEL FLO score of 97 wpm (identified previously by the regression equation) they were 6.918 times more likely to meet standards on the third grade reading ISAT exam. The only other variable to pass the .05 alpha test in this analysis was SES status. However, with an odds ratio of only .224, this variable did not significantly influence the predictability of students' benchmark status on the third grade reading ISAT.

*Chi-square Test.* The chi-square test between meeting the second grade IDEL FLO benchmark and the third grade ISAT benchmark resulted in a chi-square of 22.853. With two degrees of freedom, a chi-square value of 5.99 or higher passes the .05 alpha test. Therefore, it can be concluded that with a chi-square of 22.853, there is a statistically significant difference in students' probability to meet standards on the third grade reading ISAT based on whether or not they met the spring second IDEL FLO benchmark. Based on the within group variance, 42.8% (65/152) of total students that met spring FLO benchmarks also met ISAT standards. 57.2% (87/152) of children that met standards on the second grade IDEL FLO did not meet the ISAT benchmark. However, 87.8% of the students that did not meet the second grade IDEL FLO benchmark failed to meet the third grade ISAT performance target. This is a difference of 30.6% from those that did meet the IDEL FLO benchmark of 65.

Additional chi-square analyses were conducted with each of the remaining independent variables and the third grade ISAT reading test. As with the other analyses, the only variable to have a significant effect on predicting a

student's third grade reading ISAT benchmark status was SES. The within group variance indicated that 30.3% (66/218) of students receiving free and reduced lunch met ISAT reading standards. Yet, over half (9/16) of the students that did not receive free and reduced lunch (56.2%) met these same standards. The fact that almost 70% (152/218) of the children that came from a low socioeconomic background did not pass the third grade reading ISAT test suggests that there may be a significant relationship between the two variables.

## 7. Summary

With a correlation coefficient of .476, the alternate research hypothesis that there is a strong correlation between the spring second grade IDEL FLO and third grade reading ISAT exam was rejected. However, it was evidenced a high, moderate correlation existed. Out of the three additional independent variables tested (gender, years in an ELL program and SES status) only SES status passed a .05 alpha test. However, SES status only accounted for 2.3% of variance in scores and had a weak overall influence on third grade reading ISAT performance. Therefore, the alternate hypothesis: *When combined with the spring IDEL FLO score, at least one the supplementary variables (gender, years in an Illinois approved ELL program, or SES) will strengthen the ability to predict ISAT scores* was rejected.

## 8. Conclusions and recommendations for practice

The findings of this study support Cummins' Developmental Interdependence Theory, that is, proficiency in acquisition of a second language is dependent upon a developed first language. The results of the study exemplified that a student's score in Spanish reading fluency on the IDEL FLO test was a modestly reliable predictor of English reading comprehension performance on the state reading achievement test in English one year later. When considering program options for ELL students, the study supports the contention that students should continue to build maturity and confidence in a first language, nurturing inter-related language arts skills (reading, writing, speaking and listening) in use of both conventional and academic language while bridging into acquisition, fluency, and articulation in English. The school should then provide a program promoting continued growth in first language communication arts rather than abruptly transitioning the student into an all-English classroom and concluding instruction in the student's first social and academic language.

The conclusions highlight the problems that many school districts in the US face when making program decisions for ELL students, suggesting it is counterproductive to accelerate students' transition into English learning and eliminate continued development in a first language towards the short term goal of achieving a higher score on an English language reading achievement test. The results are also a reminder that it is critical for districts to develop a research methodology prior to designing, implementing or assessing program recommendations.

On a practical level, the results indicate the IDEL FLO test can be a useful predictor of student readiness relative to English academic language acquisition. A threshold score was determined in this study on the IDEL FLO that is a moderately reliable predictor of the student's ability to perform at the "meets" level on the state reading achievement test in English. According to the regression equation found in this study, the new target for performance on the second grade spring IDEL FLO test should be 97 words read correctly in one-minute, 32 words beyond the current district benchmark of 65. Based on the results from the children that reached at least a score of 97 on the IDEL FLO, 71% met standards on the third grade ISAT reading test. Students that reached a second grade spring IDEL FLO score of 97 were 6.918 times more likely to meet the third grade ISAT reading benchmark, an increased likelihood 1.255 times greater than those that met or exceeded the benchmark of 65 wpm. Thus, students whom have not attained this threshold should be screened to determine developmental proficiency in their first language and how much support is needed to ensure success in English language acquisition while maintaining first language development.

The reading results in Spanish and English in the study highlight serious concerns about the performance of second and third grade ELL students in County School District. Based on the chi-square test, the overall percentages of meets and exceeds on both tests was 28.7%. Thus, over 71% of the students were not performing at grade level in one or both languages. This stands in marked contrast to the high percentage of students in the district overall



meeting state standards in reading. The district's overall academic performance is markedly impacted by the limited success of this student sub-group. It can be argued that if the intent of the district to ensure high reading achievement for *all* students, additional resources should be directed to schools and programs that are serving this student population, guided by practices informed by research on how to best effect English reading comprehension for ELL students.

The conclusion of this study supports fostering children's native oral reading Spanish skills prior to transitioning them into an all-English setting. Therefore, school districts may want to reconsider their approach to teaching oral reading skills in students' native Spanish language and adopt, for example, recommendations made via the Reading First initiative. In an article that focused on Reading First, The Center for the Improvement of Early Reading Achievement (CIERA), recommends that ELLs consistently participate in read-alouds of big books, read along with proficient readers, and listen repetitively to books read aloud in order to gain fluency (Antunez, 2002). These instructional activities can be seamlessly used in both languages and thus provide a bridge of language activities in Spanish and in English.

Schools that are not using the IDEL FLO or a similar test to assess progress in oral fluency in Spanish may want to consider adoption to determine first language proficiency. However, administering the test alone will only provide data to determine the oral reading proficiency of learners in Spanish. The actions taken by the school district to assist students in first language development and transition to English are the essentials in making effective use of the information provided by this assessment. For example, it might be beneficial to progress monitor all second grade Hispanic ELL students on a consistent basis until they reach the benchmark of 97 words read correctly in one-minute. After reaching this benchmark, students should still be monitored via the IDEL FLO, but not as frequently as those still below that mark. It is important to note that when second grade students met the new goal of 97 words per minute, their likelihood of meeting third grade ISAT reading standards improved by 28.2% (71.0-43.8).

As indicated above, the fact that this study was not able to establish significant or consistent results in regard to the subgroups of years in an Illinois approved ELL program and SES does not lead to a conclusion that these factors have no impact on third grade ISAT reading scores. Rather, the results suggest that, in order to significantly determine the relationship between these variables and the third grade ISAT reading test, a larger study is warranted.

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